Universitatea de Medicina si Farmacie
"Carol Davila", Bucuresti

Ianuarie 2014

Procese patologice ce determina sindrom piramidal, sindrom extrapiramidal, sindrom diskinetic

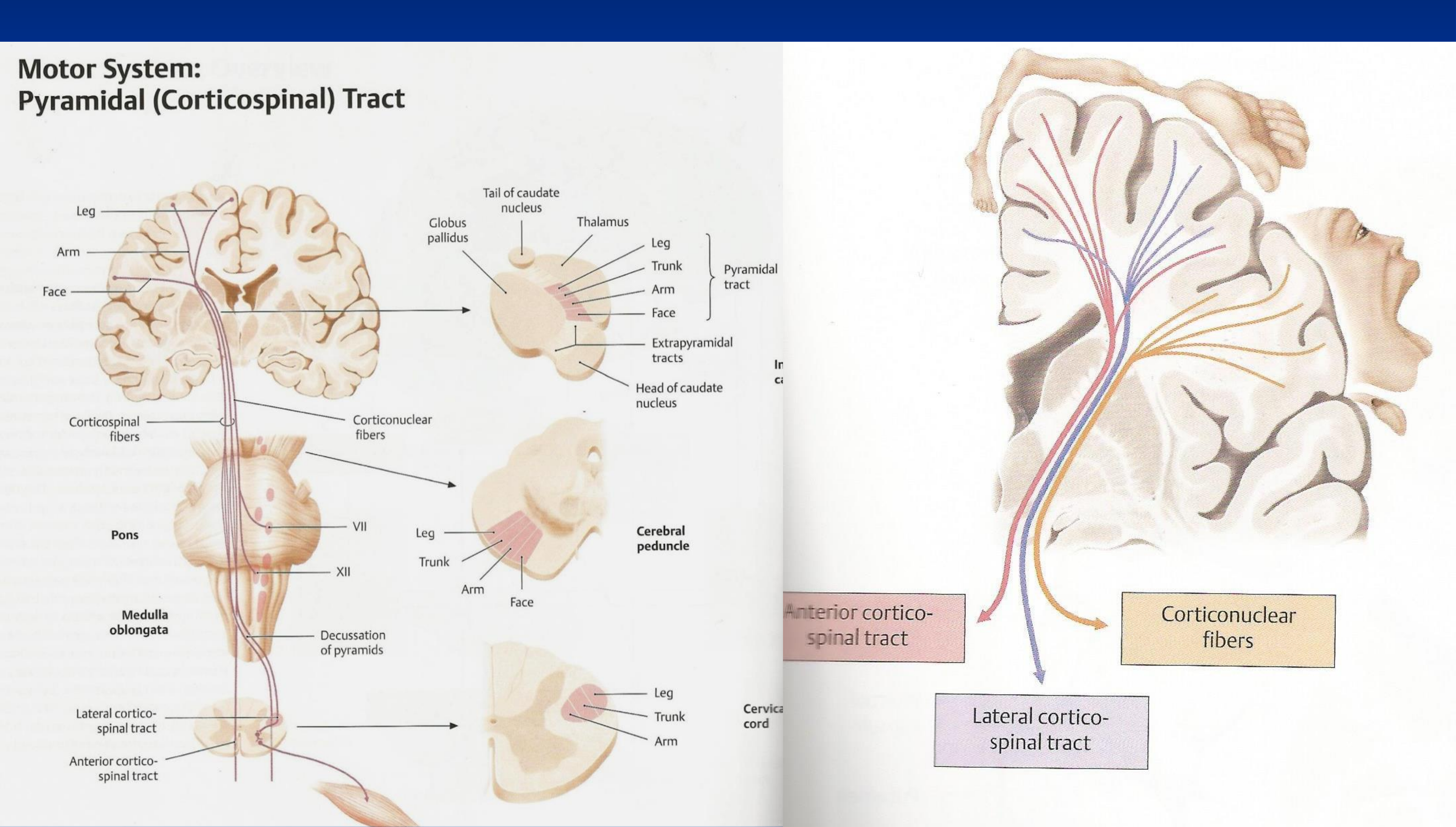
Felix M. Brehar
Asistent Universitar
Medic primar neurochirurg

Spitalul Clinic de Urgenta
"Bagdasar-Arseni"
Catedra de Neurochirurgie

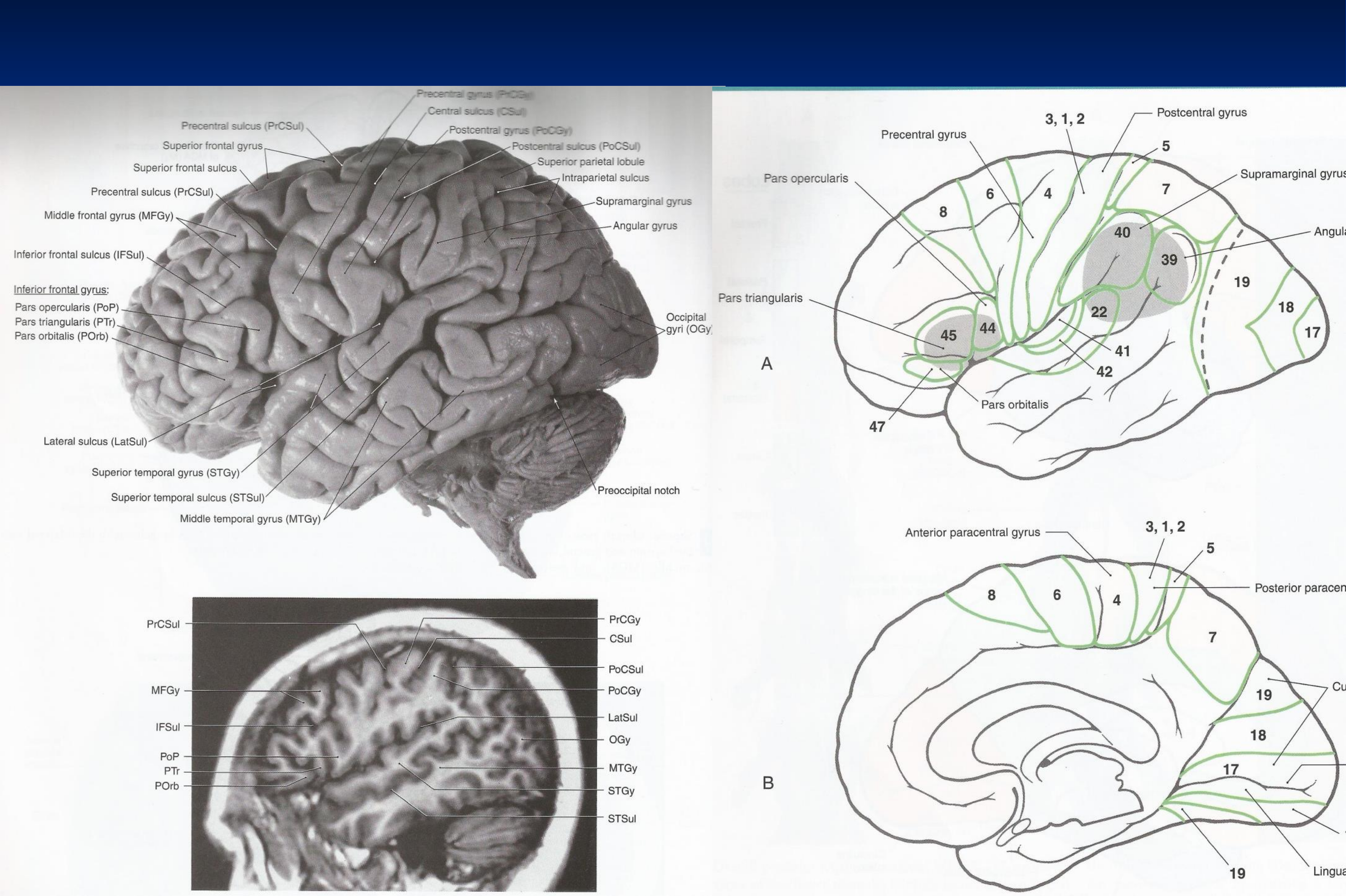




Sistemul piramidal - overview

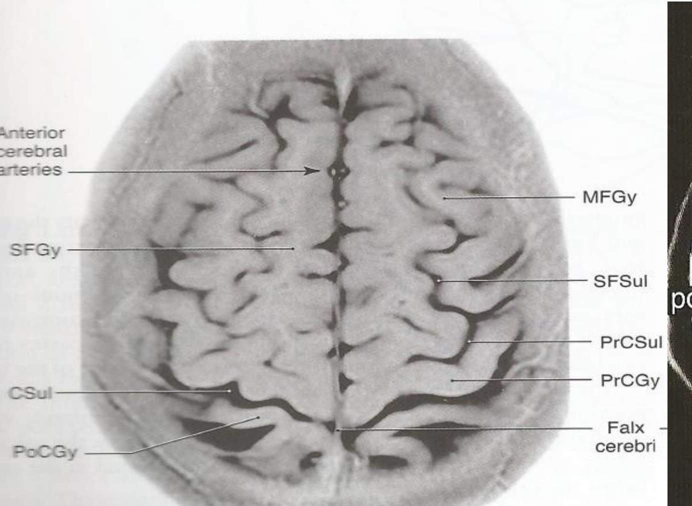


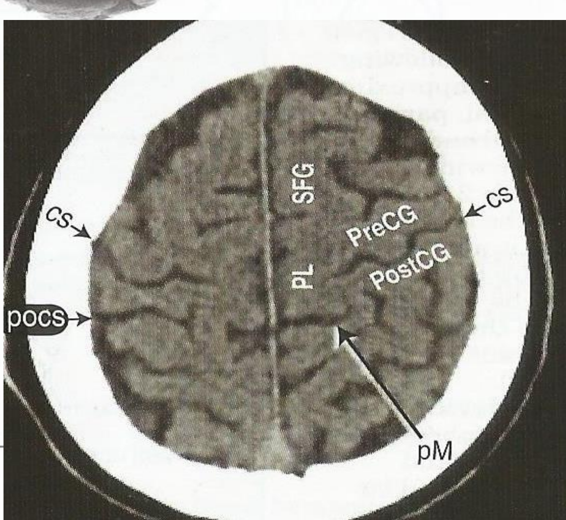
Nivelul cortical – aria motorie

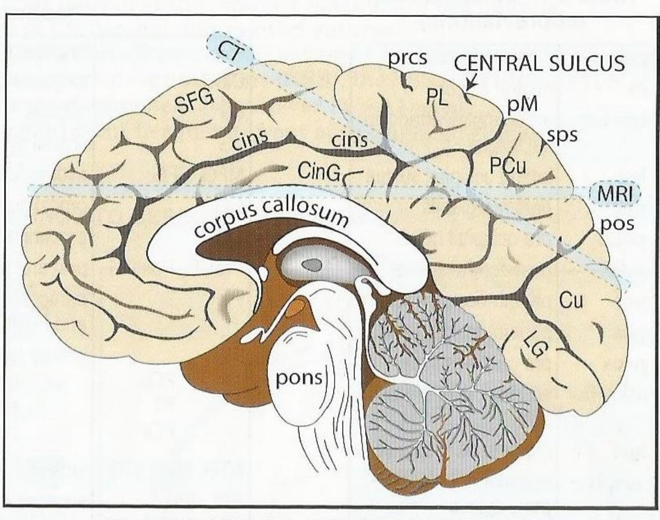


Santul central-identificare imagistica

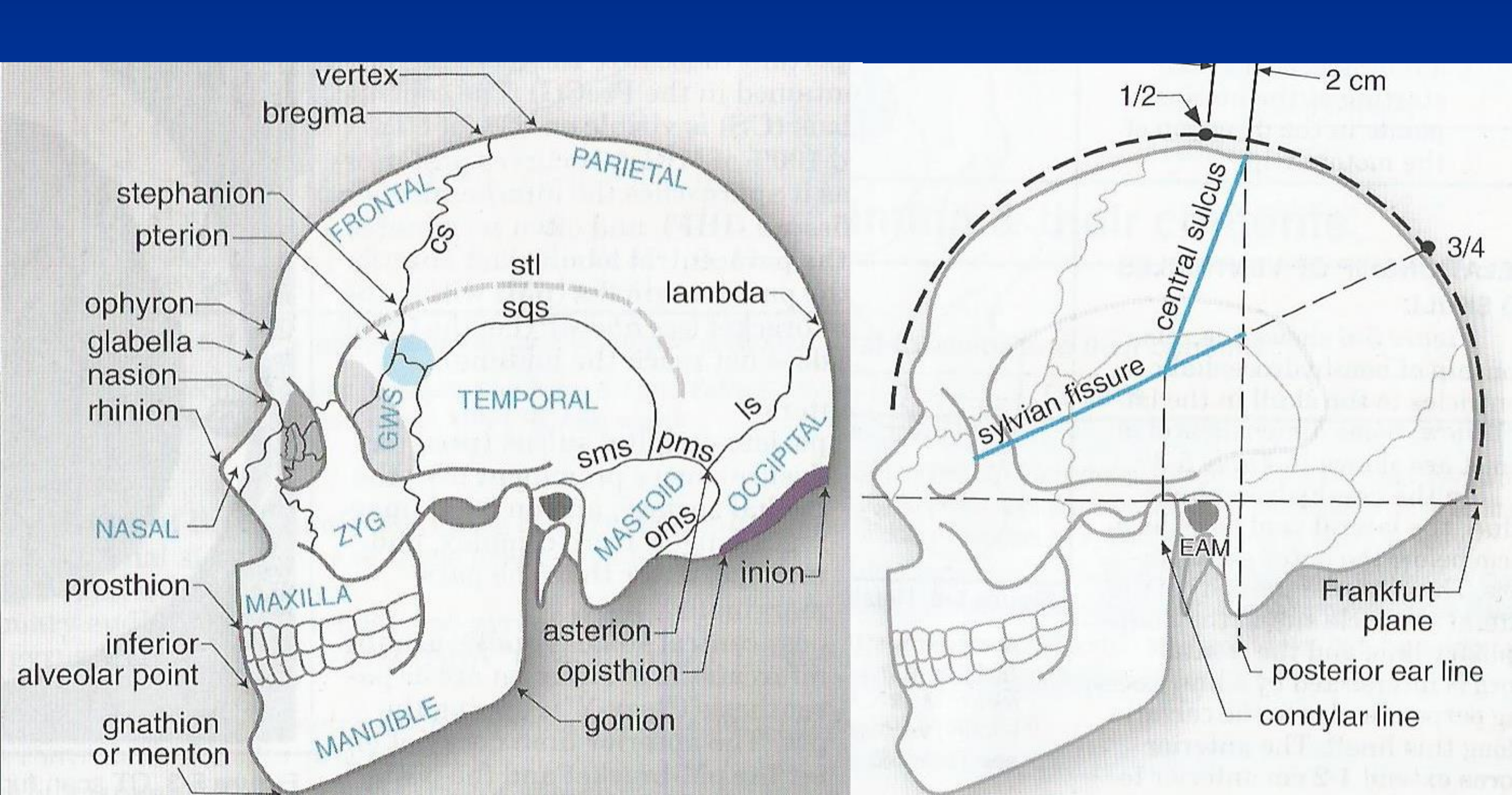
Superior frontal gyrus (SFGy)
Middle frontal gyrus (MFGy)
Superior frontal sulcus (SFSul)
Precentral sulcus (PrCSul)
Precentral gyrus (PrCGy)
Central sulcus (CSul)
Postcentral gyrus (PoCGy)
Postcentral sulcus
Precentral gyrus (PrCGy)
Central sulcus (CSul)
Supramarginal gyrus
Superior parietal lobule
Occipital gyri



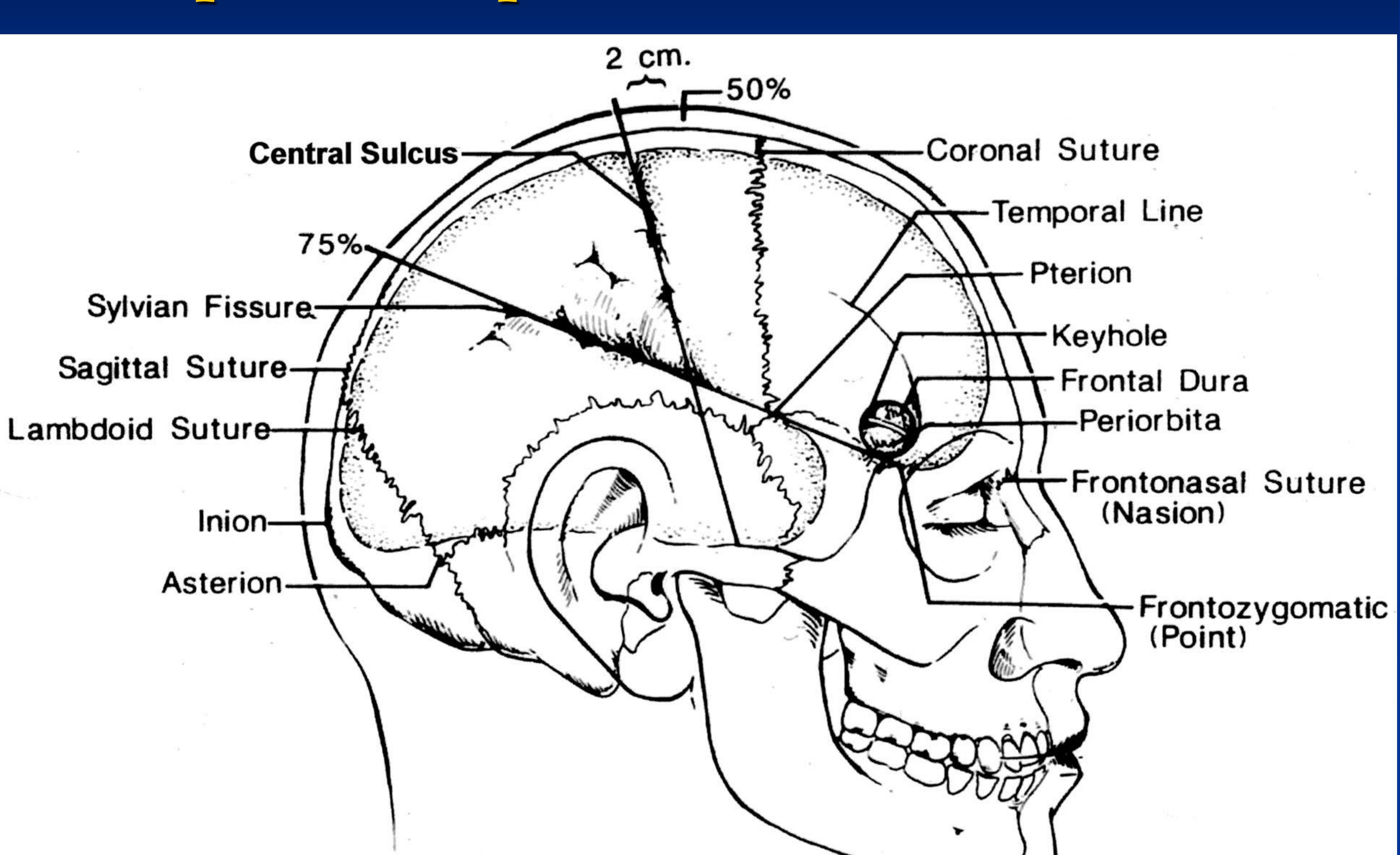




Aproximarea pozitiei santului central pe baza reperelor craniene externe



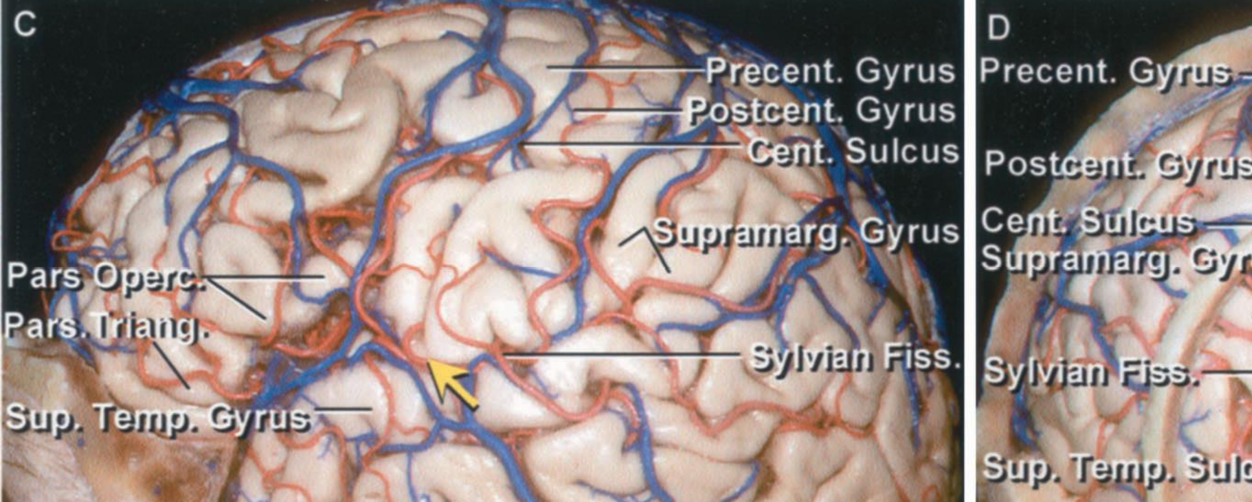
Aproximarea pozitiei santului central pe baza reperelor craniene externe

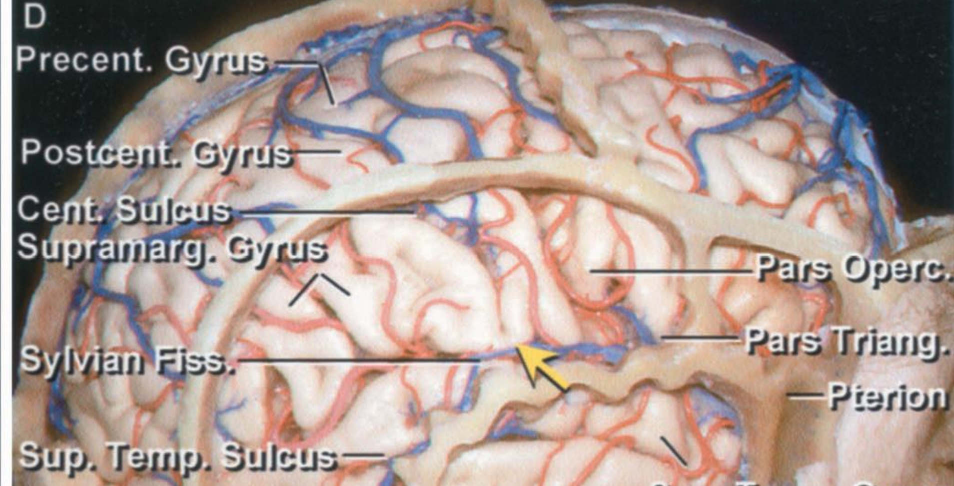


Aproximarea pozitiei santului central pe baza reperelor craniene externe

A
Coronal Suture
Sag. Suture
Sup. Temp. Line
Mid. Men. A.
Ant. Br.
Squam. Suture
Pterion
Sup. Temp. Line
Mid. Men. A.
Post. Br.
Lambdoid Suture

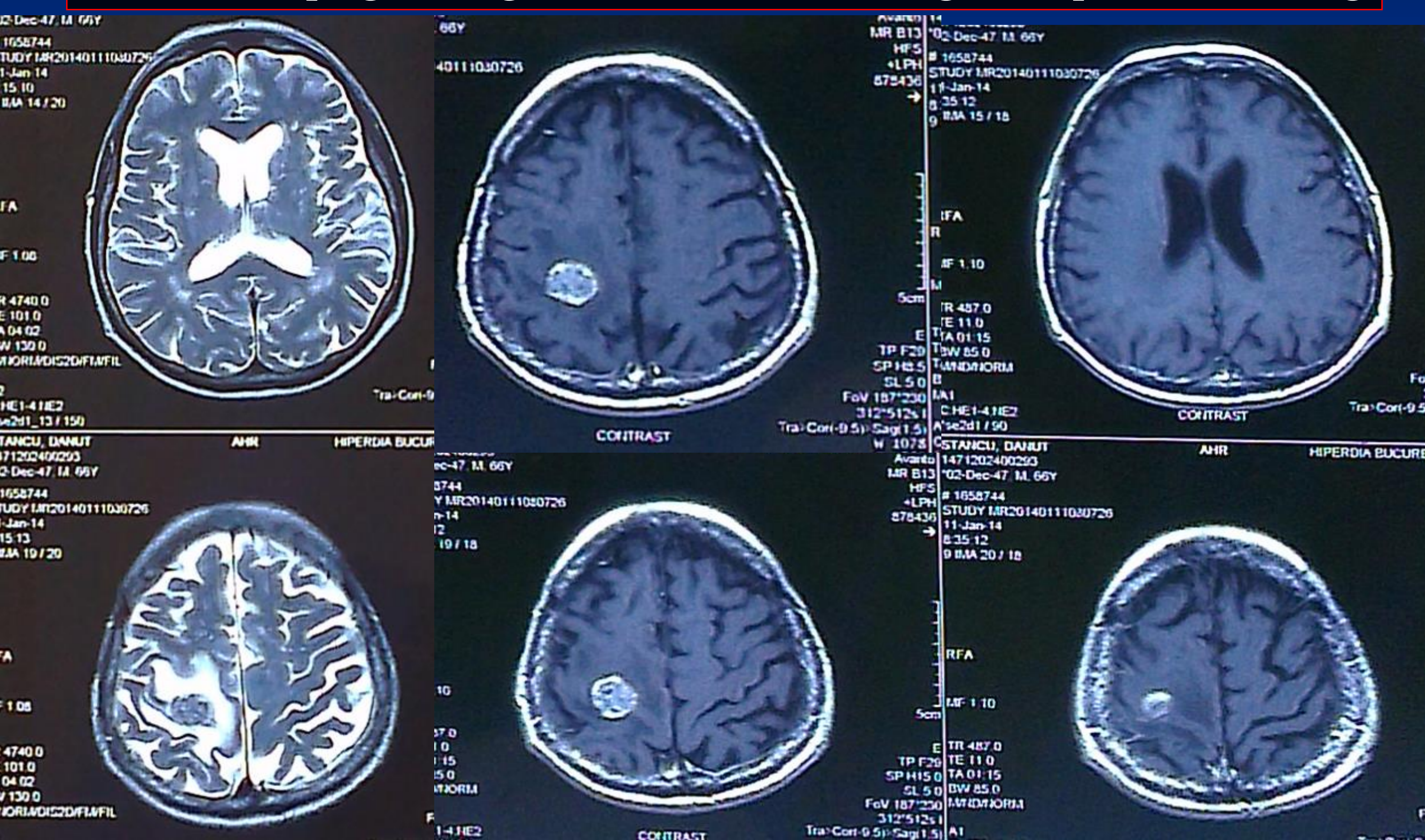
B
Precent. Gyrus
Cent. Sulcus
Postcent. Gyrus
Pars Operc.
Supramarg. Gyrus
Pars Triang.
Sylvian Fiss.
Sup. Temp. Gyrus
Pterion
Lambdoid Suture





Caz I

66 ani, hemiplegie stanga, tumora localizata in girusul precentral stang



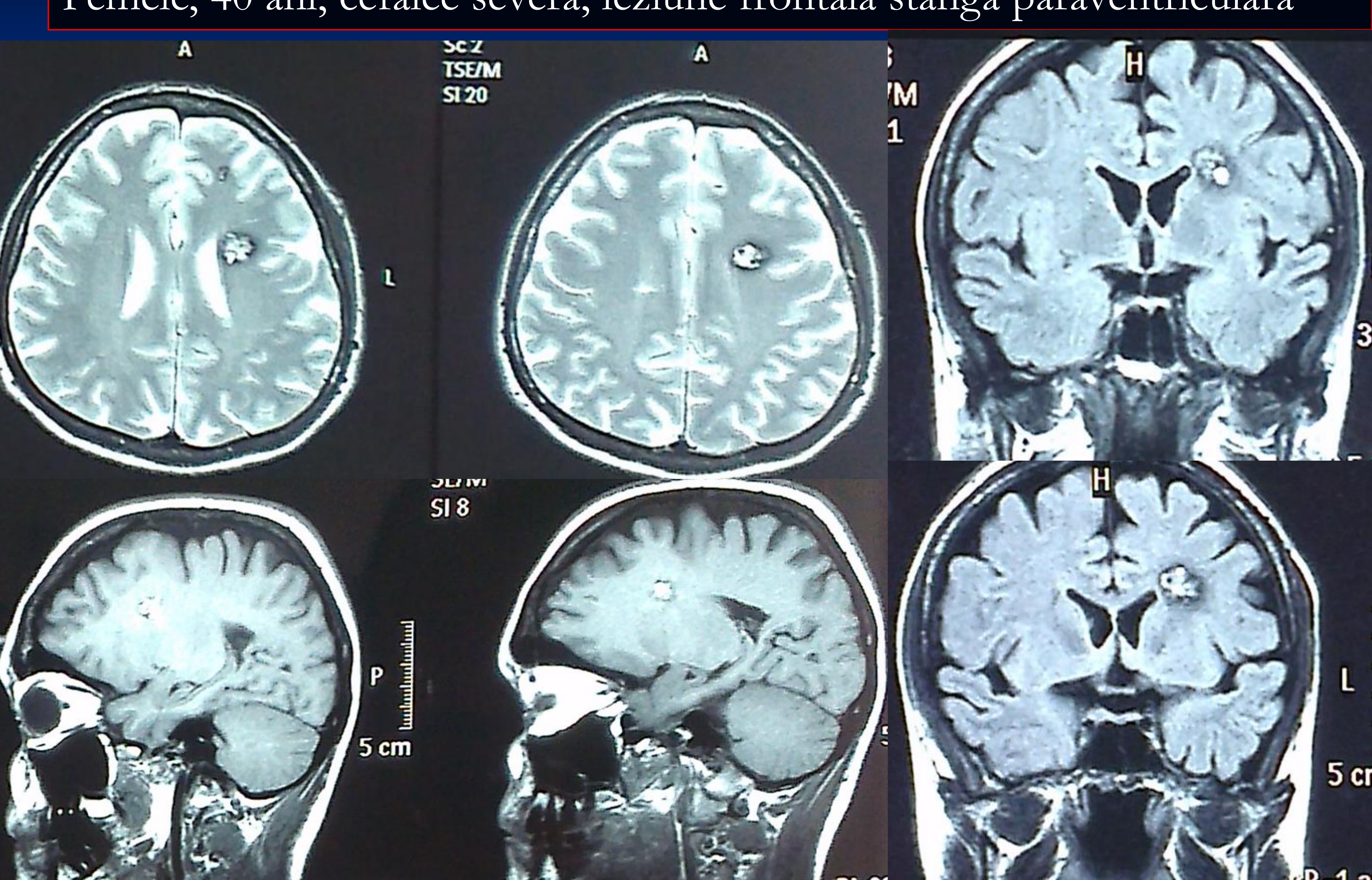
Caz I

66 ani, hemiplegie stanga, tumora localizata in girusul precentral stang, ablatie totala



Caz II

Femeie, 40 ani, cefalee severa, leziune frontala stanga paraventriculara



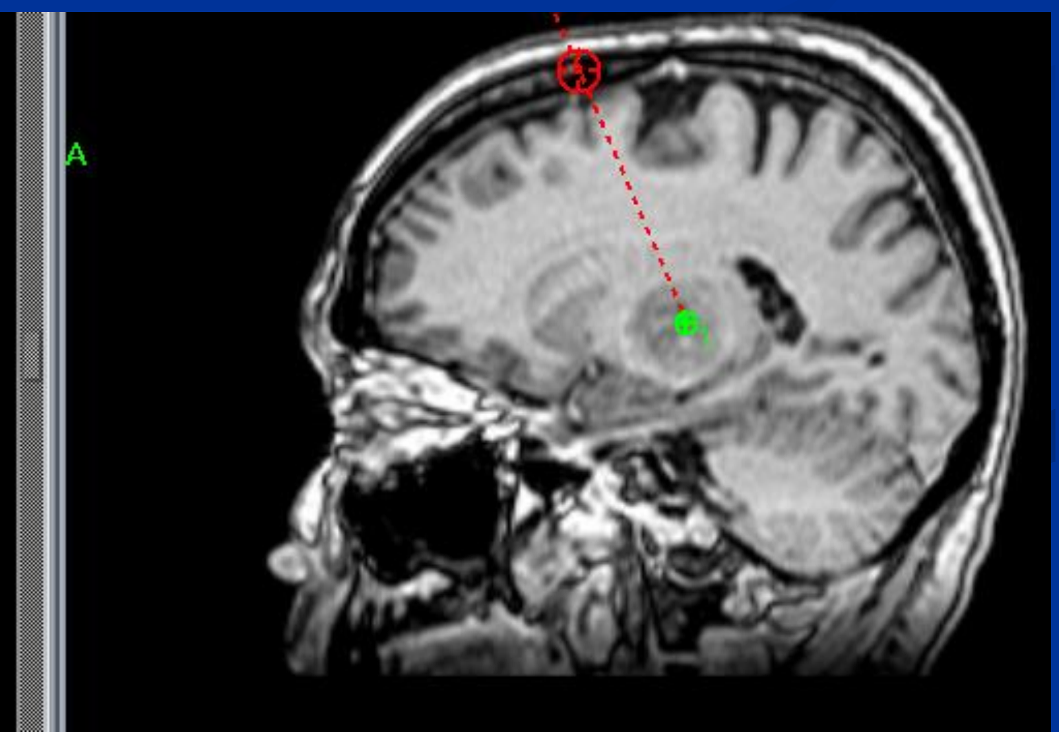
Caz II

Cavernomul – ablatie totala

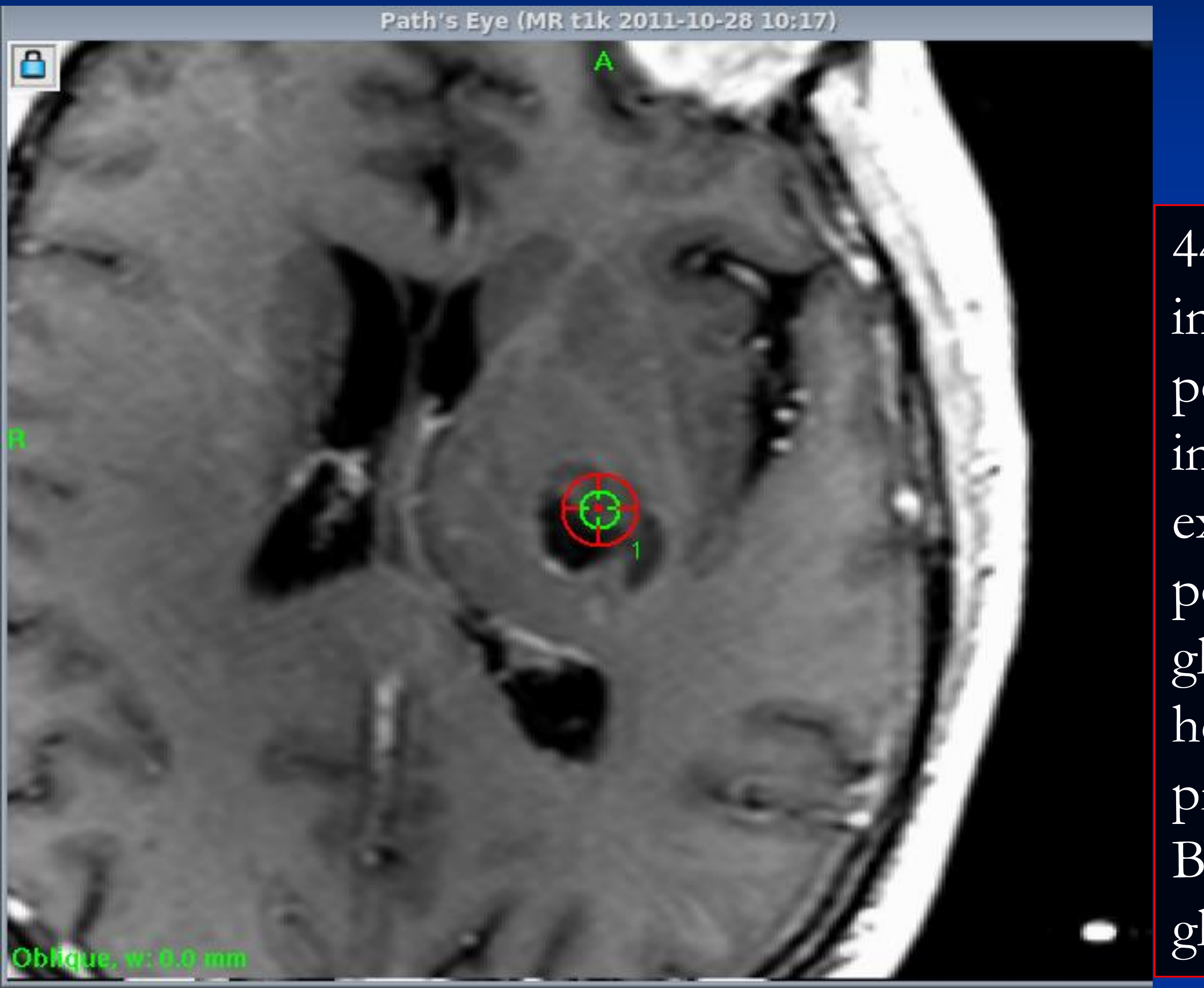


Caz III

54 ani, tumora talamica dr, hemipareza stg, biopsie stereotactica - glioblastom

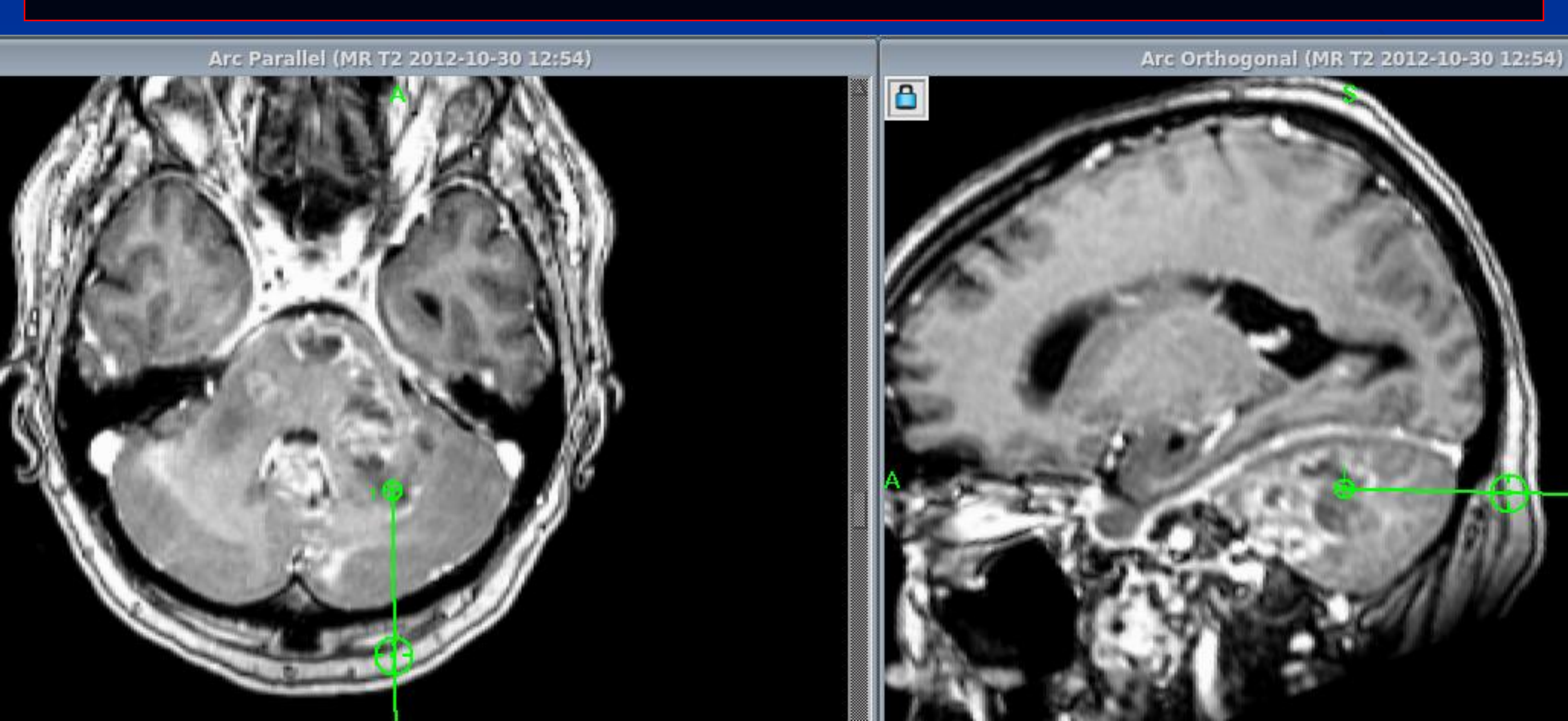
Caz IV



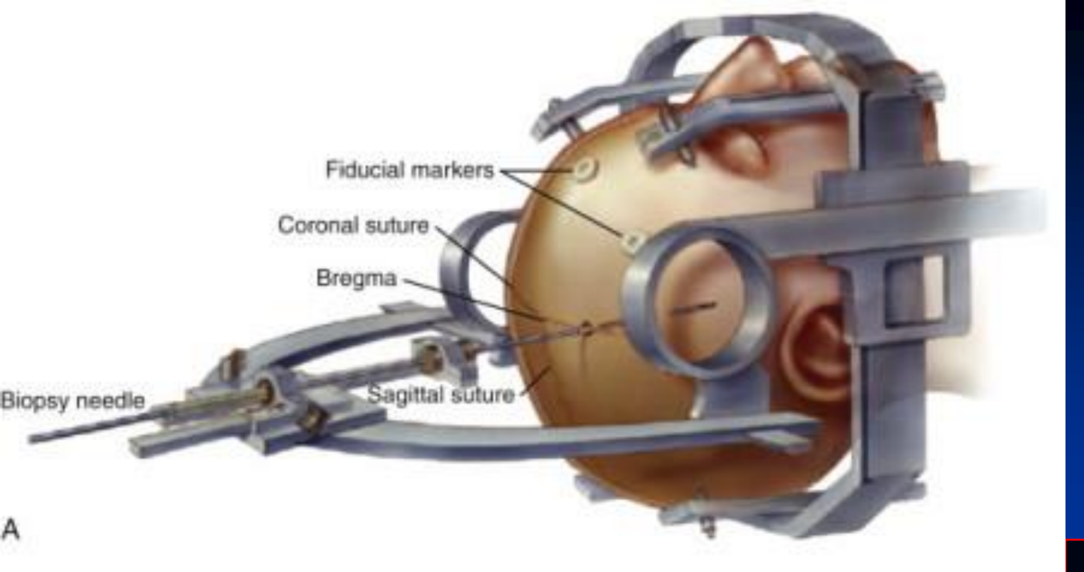
44 ani, tumora cu interesarea bratului posterior al capsulei interne, portiunea externa a talamusului si portiunea posterioara a globus pallidum, hemipareza dr predominent crurala, Biopsie stereotactica – gliom grad II

Caz V

Leziune pontina cu extensie prin pedunculul cerebral mijlociu stg la nivelul emisferului cerebelos stang. MR cerebral, secventaT1 cu contrast, abord stereotactic transcerebelos



Caz V- abord stereotactic alternativ

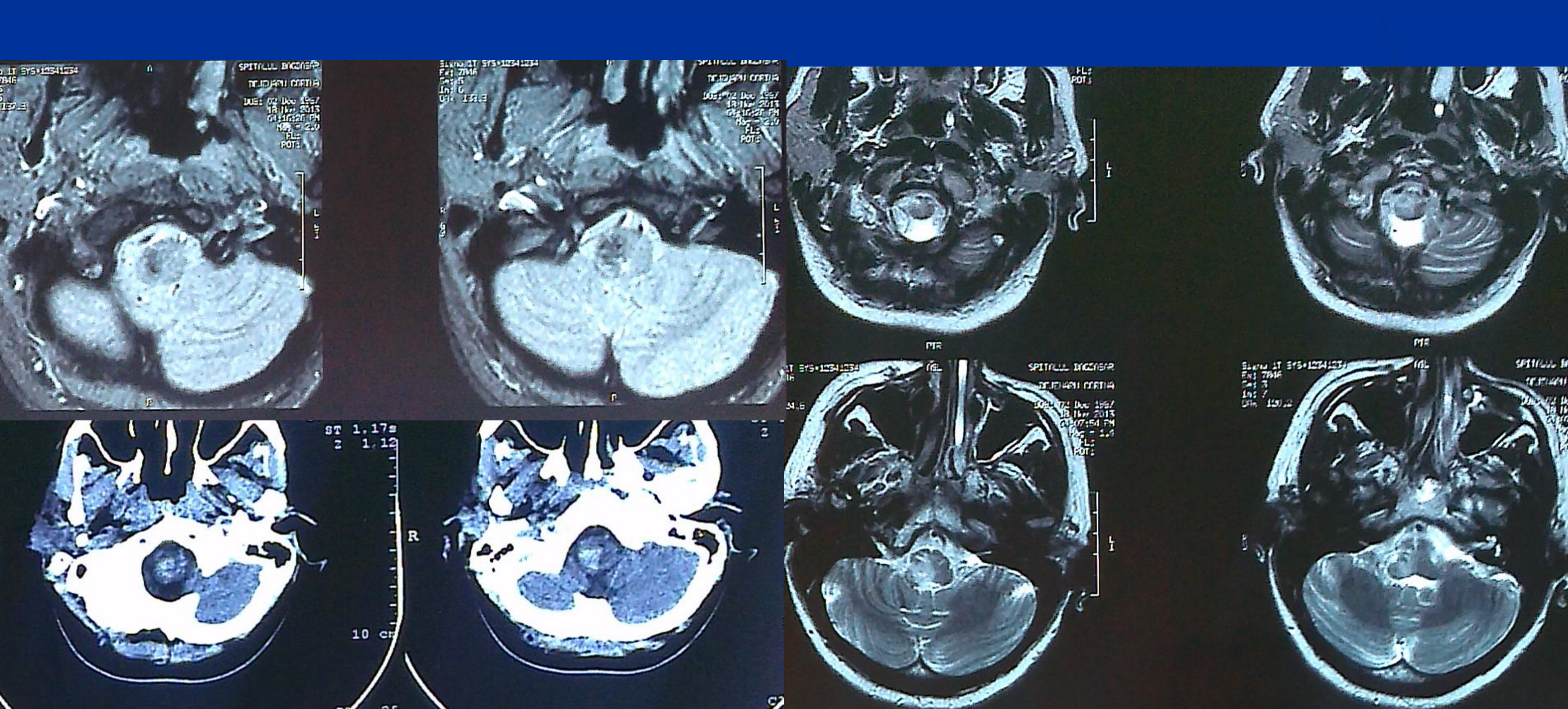


contralateral, transfrontal, extraventricular

Amundson E.W., McGirt M.J., Olivi A.: A contralateral, transfrontal, extraventricular approach to stereotactic brainstem biopsy procedures. Technical note. J Neurosurg 2005; 102:565-570

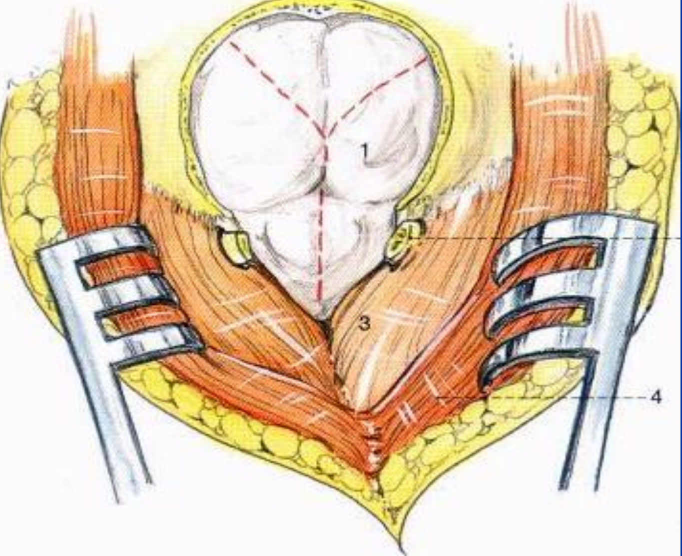
Caz VI

45 ani, astazoabazie, frusta hemipareza dr, cefalee, somnolenta, disfagie pt lichide si solide, cu debut brusc de 7 zile



Caz VI





45 ani, cavernom bulbar dr.; abord suboccipital+laminectomie C1

Caz VII

37 ani, tumora intramedulara T2-T4, parapareza spastica, Frankel D



Caz VII

37 ani, tumora intramedulara T2-T4, ablatie subtotala, ependimom

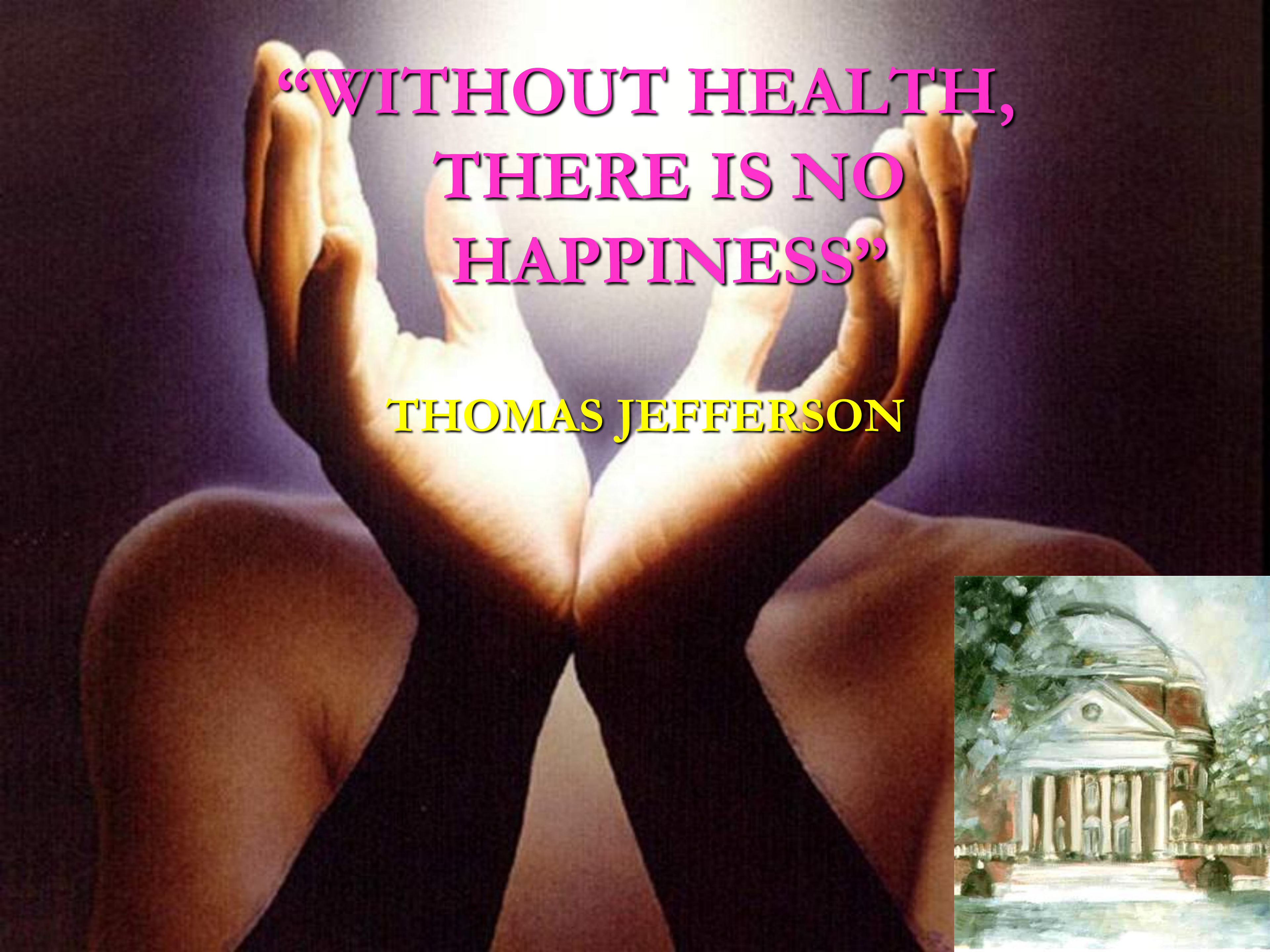
Tracts of the posterior funiculus
Fasciculus gracilis
Fasciculus cuneatus
Lateral spinothalamic tract

Sulcal artery
Right posterior spinal artery
Posterior horn
Left posterior spinal artery
Anterior horn
Spinal branch
Tracts of posterior funiculus
Sulcal artery
Pyramidal tract
Lateral spino-thalamic tract
Anterior spinal artery
Vasocorona
Posterior segmental medullary
Spinal branch
Anterior segmental medullary

VA MULTUMESC PENTRU ATENTIE !






"WITHOUT HEALTH, THERE IS NO HAPPINESS"
THOMAS JEFFERSON

Introduction

- The authors present their experience in 54 stereotactic biopsies performed for infiltrative, multicentric and deep-seated low-grade and high-grade cerebral gliomas using
- Leksell stereotactic system and the newest software: Stereotactic Planning System (SPS), NTPS 8.2.
- The neuroimagistic tools used for these procedure include the CT scan (Philips, Briliance, spiral), MRI 1,5 Tesla (Philips Integra) and the technique of image fusion.

Material and Methods

Population

- “Bagdasar – Arseni” Clinical Hospital
- 54 consecutive patients with supratentorial infiltrative, multicentric and deep-seated gliomas
- Stereotactic biopsy
  - 8 children
  - 46 adults
- Period = 01.07. 2008 – 31.06.2010

  = 24 months



Material and Methods

Age Distribution

54 consecutive cases

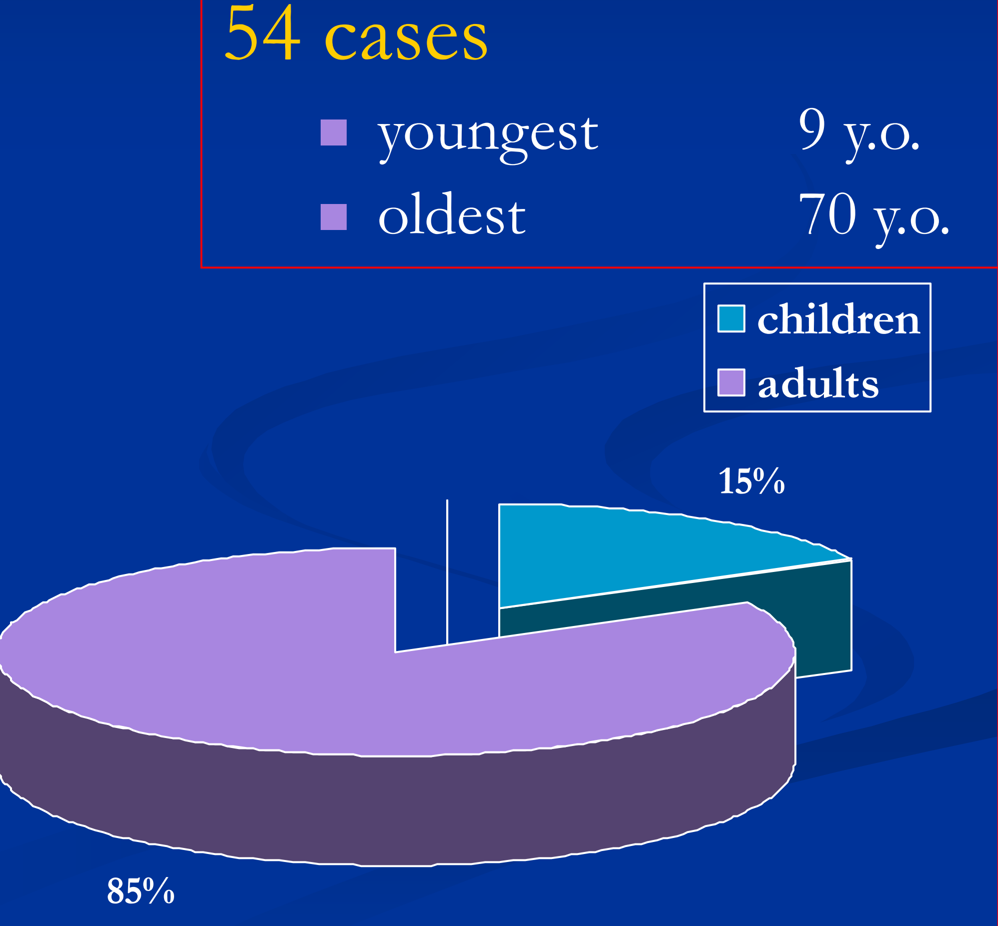
Medium age: 42 years



- 8 children 14,8%
- 46 adults 85,2%

54 cases

- youngest 9 y.o.
- oldest 70 y.o.



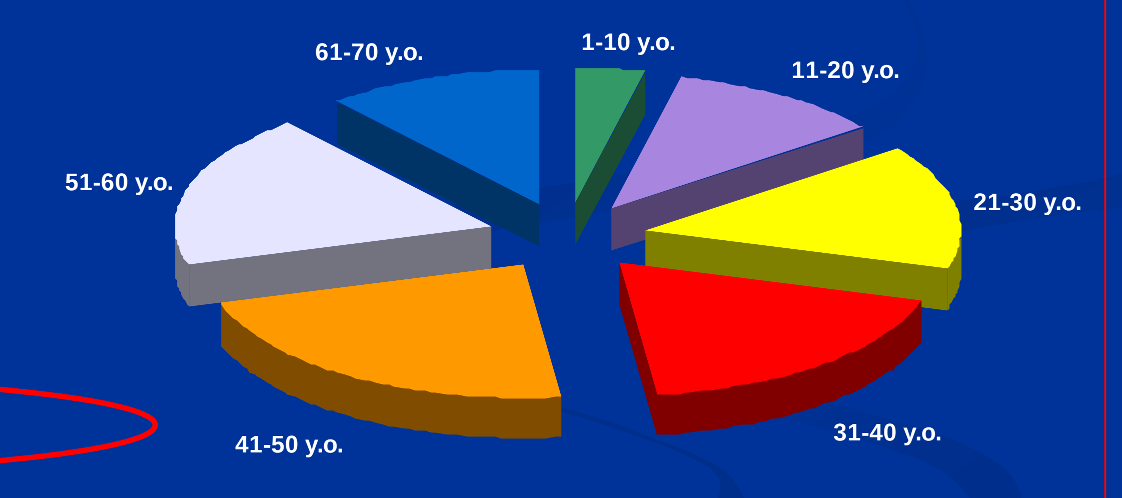
Material and Methods

Age Distribution



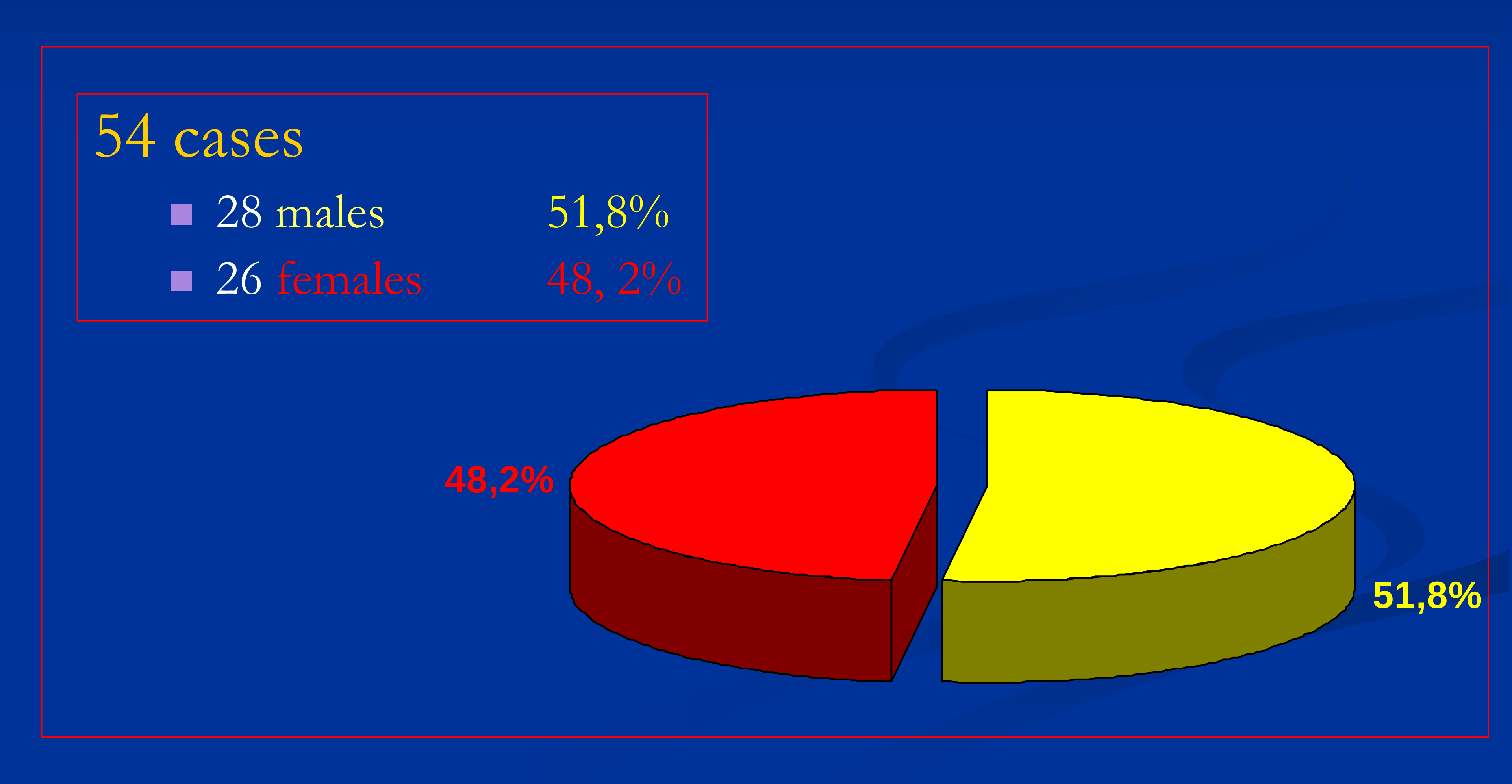
54 consecutive cases

1 - 10 years	2 cases	3,7%
11 - 20 years	6 cases	11,1%
21 - 30 years	8 cases	14,8%
31 - 40 years	10 cases	18,5%
41 - 50 years	12 cases	22,2%
51 – 60 years	10 cases	18,5%
61 – 70 years	6 cases	11,1%



Material and Methods

Gender Distribution



Results

Histopathological results



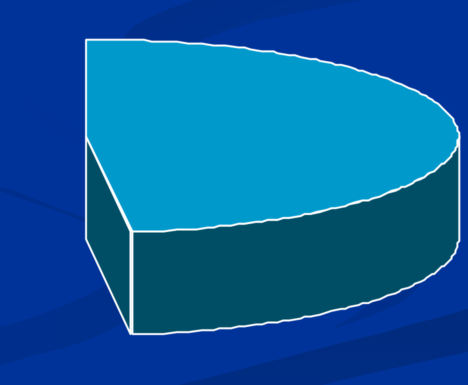


- 26 cases grade IV gliomas 48,2%
- 10 cases grade III gliomas 18,5%
- 8 cases grade II gliomas 14,8%
- 4 cases of grade I astrocytomas 7,4%
- 4 cases oligodendrogliomas 7,4%
- 2 cases of grade I gangliogliomas 3,7%



- grade IV gliomas
- grade III gliomas
- grade II gliomas
- grade I astrocytomas
- oligodendrogliomas
- grade I gangliogliomas

7%
4%
7%
19%



Results

Histopathological results

- Four cases with initial inconclusive results (7,4%)
- Of these 4 cases, after a histopathological reexamination (including the immunohistochemistry techniques) , 2 cases (3,7%) have been interpreted as grade II fibrilarry astrocytoma, 1 case (1,8%) as grade I pilocitic astrocytoma and 1 case (1,8%) as ganglioglioma.
- In 18 cases (33,3%) the immunohistochemistry has been performed in order to obtain more precise histopathological results (tumor grading)

Results

- In this series the immediate postoperative (first 7 days after biopsy) mortality was 0,
- One case of death occurred at 10 days after biopsy (a patient with glioblastoma with mass effect who refused open surgery-increased peritumoral edema)
- 12 cases (22,2%) of CT scan evidence of hemorrhage at the biopsy site
- No cases of clinical significant hemorrhages at the biopsy site.
- Temporary increasing of neurological deficits has been noticed in 6 patients (11,1%) .

Perspectives

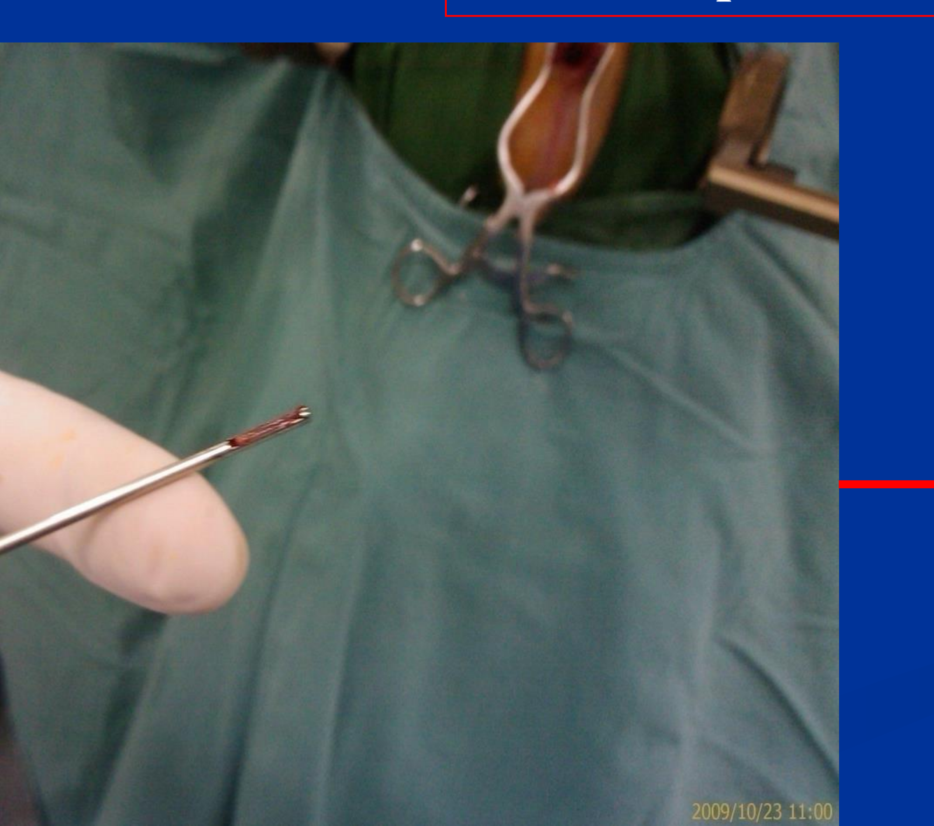
Smaller samples

↓

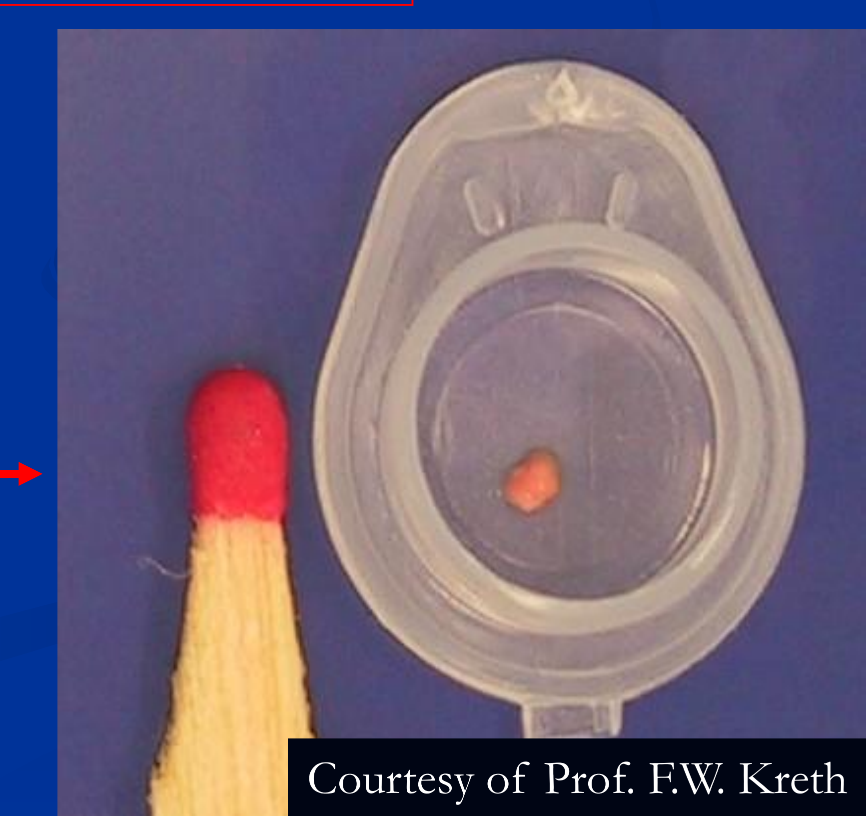
Decrease the hemorrhagic accidents

↓

Safer procedure for the patient



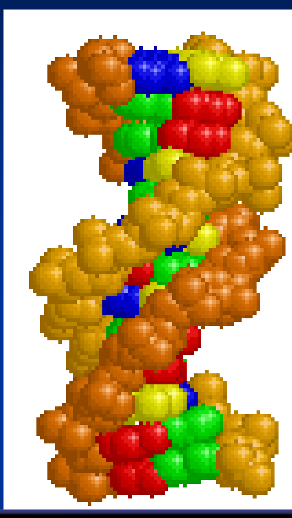
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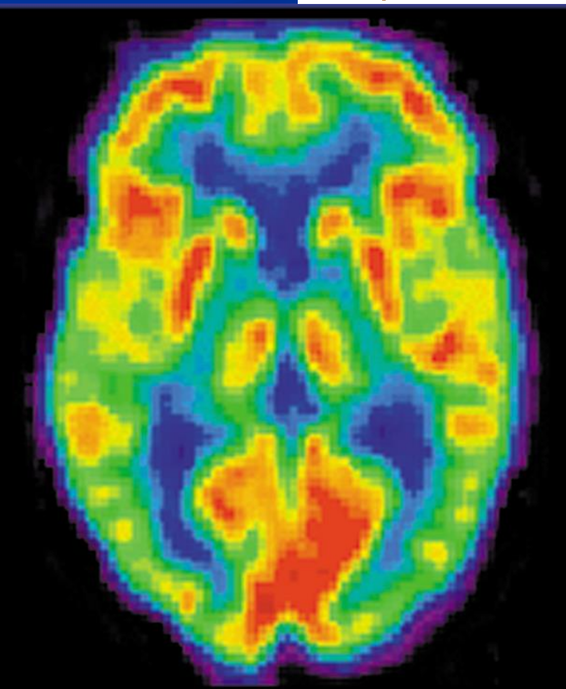


Courtesy of Prof. F.W. Kreth

Perspectives

- DNA - extraction
- Molecular analysis:
  - MGMT metilation status in high-grade astocytomas
  - Cromosome deletion 1p/19q in oligodendrogliomas
- PET image fusion including:
  - 18F-deoxiglucose PET





Conclusions

- Image guided stereotactic biopsy represents now a safe method for:
  - establishing a precise histopathological diagnosis,
  - evaluating the grade of gliomas malignancy
- The result of the stereotactic biopsy influence the decision of the therapeutically strategy for the patient.
- In some specific lesions, like cystic lesions with or without solid component, this procedure could be an efficient alternative to open surgical approach.